SFIREG

State FIFRA Issues Research and Evaluation Group

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TREATED SEED ISSUE PAPER

I Background

Pesticides in seed coatings can provide a targeted application that protect seed and plants from below and above ground pests (ASTA, 2021). The mass of pesticides introduced through treated seeds can be far less than a soil or foliar application to the same plant. Industry cites the targeted pesticide use on seeds as a benefit that reduces overall pesticide use (ASTA, 2021). However, for many commodities, the widespread use of treated seeds appears to be prophylactic, and it is not clear if seed treatment use always replaces an alternate pesticide application (Krupke and Tooker, 2020). The offsite transport of pesticides present in seed treatments has been well established and linked to water quality concerns (Hladik et al., 2014; Huseth and Groves, 2014; Main et al., 2015). Consumption of treated seeds by birds can lead to severe impacts including death (Lopez-Antia et al., 2013). Concerns over the drift of dust generated at the time of planting and impacts to pollinators have also been well documented (Nuyttens et al., 2013; Pistorius et al., 2009). There does appear to be some stewardship efforts in place in the industry; however, the regulatory structure prevents a comprehensive approach to environmental protection from treated seeds at the state level.

Treated seeds fall under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) treated article exemption. Under federal law, "treated articles" are pesticides that are exempt from registration requirements pursuant to FIFRA section 25(b). An article or substance treated with pesticide qualifies for the exemption if: (1) the incorporated pesticide is registered for use in or on the article or substance, and (2) the sole purpose of the treatment is to protect the article or substance itself. (40 CFR s. 152.25.) The EPA exemption of treated seeds from registration under the "Treated Article exemption" leaves the states with a regulatory gap related to environmental protection, disposal, enforcement, complaints, questions, and potential lawsuits.

SLA's have the ability to register seed treatment products used to coat treated seeds when the coating process takes place in their state. However, once a seed is coated the resulting treated seed is considered exempt from registration and thus there is no clear mechanism to address interstate commerce of treated seed. In other words, if SLAs focused efforts on registration tools to address the potential impacts of seed treatment products to the environment once the resultant seed was planted, this would not provide comprehensive review of environmental impacts of seeds that could be legally planted in that state. If states were to instead develop a registration

process for treated seeds, this would be in conflict with EPA's inclusion of treated seeds in the treated article exemption. New York is currently considering legislative action that would prohibit the use of neonicotinoid treated seeds in the state.

Treated seeds ready for sale are sold in seed bags. The labeling requirements for seed bag tags fall under the Federal Seed Act (FSA) and United Stated Department of Agriculture (USDA). The FSA requires treated seed be labeled to include 1) either the pesticide active ingredient or the tradename of the seed treatment product, and 2) caution statements related to the most toxic chemical used (most seed treatment products include multiple active ingredients). In addition, seed treatment product labels often include seed bag labeling requirements. EQI has identified some FIFRA seed treatment product labels with a 'seed tag labeling' section where EPA identifies language to be included on seed bag tags. There are a few examples with numerous requirements such as state-level limitations on use, disposal instructions, or details on how planting of seeds would translate to mass of active ingredient per planted area. However, it is unclear whether states have the authority to enforce on a seed bag label. Further, SLAs likely do not have pesticide regulatory agencies prepared to inspect and enforce on seed bag labels.

The EQI committee understands that in December of 2021, The Center for Food Safety sued US EPA for the agency's failure to regulate pesticide-treated seeds and lack of response to a 2017 formal petition. Should this lead to regulatory changes at the federal level, an open dialogue of how the specifics of those changes could affect SLAs would be welcome.

II Issue identification

- It has been brought to the attention of SFIREG from State regulators that pesticide-treated seeds should be more comprehensively regulated by EPA.
- The request for regulation of pesticide-treated seeds is based on the following issues and questions that have been brought forward:
    - Concerns on the availability of data systems to track the active ingredients used in seed treatment products on specific commodities.
    - How can tracking of treated seeds be improved or accomplished?
    - Industry groups often cite that wide scale use of treated seeds is vital for crop production and the protection of seeds and emerging crops during the early growing season and that seed treatment reduces overall costs and pesticide use. Has EPA conducted the research to document the replacement and use reduction replacement of other types of applications and has EPA collected and evaluated such data to know the use and reduction data and statistics?
    - How are treated seed pesticide products included in risk assessments for the individual active ingredient reviews? The crops and food produced from treated seeds still need to meet the Food Quality Protection Act (FQPA) safety standards for reasonable certainty of no harm from consumption and exposure, and so how does EPA determine no adverse risk to humans or the environment if the treated seed aren't included in the risk assessments.

- What is the potential wide-scale impact to pollinators including native pollinators and what assessments of the potential impacts has EPA conducted when the treated seeds are considered to be in the treated article exemption category?
- How long do the seed treatment residues last in crop production locations, soil, and has EPA evaluated the fate and transport science and risk?
- What is the impact to non-target organisms and aquatic systems from use of treated seeds?
- What are mechanisms to obtain better information on the use of treated seeds?
- Could stronger oversight of seed treatment applicators be considered as a measure to address issues with treated seeds? For example, their role related to the information that is required to be included on the seed bag tag/label.
- Can states use label information transferred onto seed bag tags to enforce under existing authorities? Would the EPA registration number printed on seed bag tags enhance this authority?

III Priority

IV Proposed Resolutions or Remedies

- Treated Article and Seed Treatment Regulation
  - SFIREG urges EPA to resolve this issue and provide for immediate action.
  - Concerns have been raised by State Lead Agencies (SLA's) over the regulatory framework.
  - SFIREG urges EPA to amend 40 C.F.R. § 152.25(a), which currently excludes seeds for planting coated with pesticides, intended to kill pests of the seed or plant.
  - With EPA's consideration to regulate treated seeds, the concerns and questions hopefully can better address the use, management and regulation of treated seeds; the potential increased training and safety for mixers, applicators and producers; provide for proper and safe disposal; and provide for more complete risk assessments for the protection of pollinators, water quality, the environment, and the food supply.
  - SFIREG requests EPA to review the complete and complex regulatory processes and potential gaps of treated seeds with regards to registration, risk assessments, compliance with FQPA, licensing, mixing, handling, treating, human health protection, drift management, fate and transport, drift, risk to pollinators and ESA considerations, recycling, reuses, disposal, label instructions, and overall federal and/or state lead agency regulation responsibilities.

Issues, Resolvability, Timelines, and Collaborators

Issues	Resolvability/Priority	Timeline	Collaborators
EPA to evaluate the regulation of treated articles	High priority and in need of immediate action. The	6 months	EPA

SFIREG urges EPA to amend 40 C.F.R. § 152.25(a) which current excludes seeds for planting coated with pesticides intended to kill pests of the plant.	resolvability should be reasonable and viable.		
Product Regulation SFIREG urges EPA to address the gap and lack of comprehensive assessments and regulation of pesticide-treated seeds.	High priority and in need of immediate action. The resolvability should be reasonable and viable with existing science and review mechanisms, with the possible issue of the increased workload becoming a concern due to the current registration review work and the existing documented need for additional EPA staff.	6 – 12 months	EPA
EPA to address national consistency SFIREG urges comprehensive and consistent messaging and enforcement to better address the issues and take immediate action.	High priority and in need of immediate action. The resolvability should be reasonable and viable.	6 – 12 months	EPA, EPA Regions

References

ASTA. 2021. The Guide to Seed Treatment Stewardship. America, American Seed Trade Association (ASTA) (ed) https://www.seed-treatment-guide.com/wp-content/uploads/2013/03/Guide-to-Seed-Treatment-Stewardship.pdf .

Hladik, M.L., Kolpin, D.W. and Kuivila, K.M. 2014. Widespread occurrence of neonicotinoid insecticides in streams in a high corn and soybean producing region, USA. Environmental Pollution 193, 189-196.

Huseth, A.S. and Groves, R.L. 2014. Environmental fate of soil applied neonicotinoid insecticides in an irrigated potato agroecosystem. Plos One 9(5), e97081.

Krupke, C.H. and Tooker, J.F. 2020. Beyond the Headlines: The Influence of Insurance Pest

Management on an Unseen, Silent Entomological Majority. Frontiers in Sustainable Food Systems 4.

Lopez-Antia, A., Ortiz-Santaliestra, M.E., Mougeot, F. and Mateo, R. 2013. Experimental exposure of red-legged partridges (Alectoris rufa) to seeds coated with imidacloprid, thiram and difenoconazole. Ecotoxicology (London, England) 22(1), 125-138.

Main, A.R., Michel, N.L., Headley, J.V., Peru, K.M. and Morrissey, C.A. 2015. Ecological and Landscape Drivers of Neonicotinoid Insecticide Detections and Concentrations in Canada's Prairie Wetlands. Environ Sci Technol 49(14), 8367-8376.

Nuyttens, D., Devarrewaere, W., Verboven, P. and Foqué, D. 2013. Pesticide-laden dust emission and drift from treated seeds during seed drilling: a review. Pest Management Science 69(5), 564-575.

Pistorius, J., Bischoff, G., Heimbach, U. and Stähler, M. 2009. Bee poisoning incidents in Germany I spring 2008 caused by abrasion of active substance from treated seeds during sowing of maize. Julius-Kühn-Archiv 423, 118-126.